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ABSTRACT

This document was prepared to identify long-term needs and opportunities for adult education, suggesting the implications of long-term social changes without proposing specific actions or institutional arrangements. Following an introduction, chapter 2 discusses the following trends: (1) continued population growth, including the sources and geographical distributions of that growth; (2) increasing ethnic and racial pluralism; (3) the aging of the U.S. population; (4) changes in family life and parenthood, including the experience of single parents and mothers; (5) work and workers in transition, including changing skill requirements, displacement of workers, career changes, and emerging labor shortages; (6) polarities of education and skills, including the scope of illiteracy; (7) new public policy initiatives such as the GAIN Welfare reform program; and (8) special client groups, including disabled persons and prisoners. Chapter 3 gives the implications of each of those trends for adult education. (CML)

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in California

November 18, 1988

Submitted To:

Adult Education Unit
Division of Youth, Adult and Alternative Educational Services
CALIFORNIA STATE DEPARTMENT OF EDUCATION
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Letter of Transmittal

This paper has been prepared to provide background on the varied needs for adult education into the 21st Century. Specifically, it is intended as a discussion piece for a Special Committee on Adult Education appointed by State Superintendent Bill Honig. This committee is charged with developing a long-term strategic plan for California's Adult Education System.

The primary goal of this paper is to identify key demographic, economic, and social trends that will impact the need for adult education among the California population. Deliberate efforts have been made to avoid discussions of policy and program responses to those trends. This has been done to catalyze discussion of, and hopefully agreement on, educational needs so that subsequent policy discussions reflect broad-based social and economic needs rather than current institutional perspectives.

This paper is a working document. It does not necessarily represent the views or policies of the State Department of Education or Adult Education Advisory Committee. Its contents will be revised and augmented in accord with review by the Advisory Committee and subsequent research; and ultimately integrated into a long-term plan.

Sincerely,



Fred Best
President

Pacific Management and Research Associates

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The contents of this paper do not necessarily reflect the views of the above persons or the institutions they represent.

INTRODUCTION

Strategic planning is best approached by taking a broad look at environmental trends before dealing with institutional policies and issues. Using trends to speculate about the future has dangers. But the dangers of not attempting to systematically forecast the future are greater.

As we approach and enter the 21st Century, California will be swept into a typhoon of intensifying economic and social change. Existing challenges will be compounded by new departures and reversals of conditions that have long been taken for granted. These multiple waves of change will require new and intensified responses from individuals and the institutions that serve them.

Adult Education will continue to be called upon to assist California's population prepare for the demands of the future. This is not a new role. In the past, it has played lead roles in naturalizing the immigrant populations that have fueled the vigor of our nation, training workers for the mobilization efforts of two World Wars, and meeting the diverse educational needs of America's most pluralistic state. New challenges will continue to require leadership for adult educators. However, these challenges will require rethinking of the types of education to be provided and the ways that it will be delivered.

Assessing Needs without Jumping to Action

This paper has been prepared to identify long-term needs and opportunities for Adult Education. It suggests the implications of long-term social changes for Adult Education, but it does not propose specific actions or institutional arrangements.

The reason for deferring discussion on institutional responses is straightforward. It is important to put the adult education needs of the California people before existing

institutional perspectives. A rush to action and policy discussion can frequently obscure the social and economic needs which must be addressed.

Clearly, specific actions and institutional responses are necessary. Indeed, they are the ultimate end of the analysis conducted in this paper. However, readers are urged to resist the temptation of jumping to action; instead, they should use this paper to develop consensus about trends and changes that should guide action. Over the long-run, a clear understanding and agreement about long-term needs will establish a foundation for planning a strong and valuable system of Adult Education.

Looking to the Future with a Cautionary Note

There are dangers to forecasting the future and making long-term plans. Social forecasting literature is filled with cases of mistaken predictions. In the 1930's, C.C. Furnas wrote a wide-scoped and largely accurate forecast of the next fifty years, but totally neglected the possibility of atomic energy. In the 1960's, Ithiel DeSota Pool prepared a widely accepted international forecast in which the United States won the war in Vietnam and Lynden Johnson was overwhelmingly re-elected in 1968. Even rigorous quantitative projections can have shortcomings. Econometric analysis constructed by some of our finest minds frequently misses the advent of recessions.

Conversely, social forecasting literature also provides exemplary cases of success. Employment projections developed by the Federal Bureau of Labor Statistics have rarely been totally precise, but they have not failed in forecasting the direction and general magnitude of change. Similarly, population projections by the government are commonly very accurate. And contrary to the above experience of DeSola Pool, sound judgement in possession of good and complete facts can foresee the future.

There are lessons to be learned from the varied success of forecasting. First and foremost, some things are more predictable than others. Given the absence of wars and natural catastrophes, forecasts about population growth and demographic characteristics are commonly far more accurate than predictions of social values and specific technological breakthroughs. Second, predictions made on the basis of facts and established trends tend to be more reliable than those based upon judgement. Established trends can reverse themselves, but they provide a firmer foundation for forecasting than

anecdotal evidence and judgments clouded by personal values and hopes. Third, short-term forecasts have much greater reliability than long-term forecasts. Even projections based on the most rigorous analysis of accurate trend data can prove woefully inaccurate over the course of a few decades. Finally, in terms of long-run planning, we might all need the advice of one experienced practitioner: Plan with a long-term perspective, but always be in the first year of your long-term plan. In other words, know where you are going over the long-run, but constantly reassess your assumptions.

Despite the errors and risks of forecasting and long-term planning, the dangers of ignoring trends and failing to speculate about their future impacts carries far greater risk. Errors withstanding, we can tell something about the future, or at least postulate the most likely of possible futures. Forecasting enables us to anticipate problems and opportunities, and in many cases prevent crises that can be avoided.

More important, attention to the future enables us to seize opportunities and take actions to control rather than respond to events. The future is not only an unraveling of existing trends, it is the result of individuals and institutions interacting with trends and novel events. Attention to the future enables us to create and shape our future.

CHANGING NEEDS FOR A CHANGING STATE

Significant social and economic changes will dramatically alter the nature of California's population, and require educational institutions to recast both the content and delivery of adult education.

This paper provides a broad overview of key trends and changes that will impact California's Adult Education System into the first two decades of the 21st Century. Eight key areas of change will be discussed. These include:

- (1) Population Growth
- (2) Racial and Ethnic Pluralism
- (3) Age Distribution of Population
- (4) Family Life and Parenthood
- (5) Work and the Labor Market
- (6) Education and Skills of Population
- (7) New Public Policies
- (8) Special Groups and Trends

These eight areas of social and economic change do not reflect all the areas and issues that will impact Adult Education. Nor do they include the unpredictable events, such as wars and natural catastrophes, that can radically alter the needs and priorities of a society. The above eight areas do represent identified trends and developments which have been documented by facts. These eight areas of key change can be predicted with some assurance, providing a foundation for long-term planning.

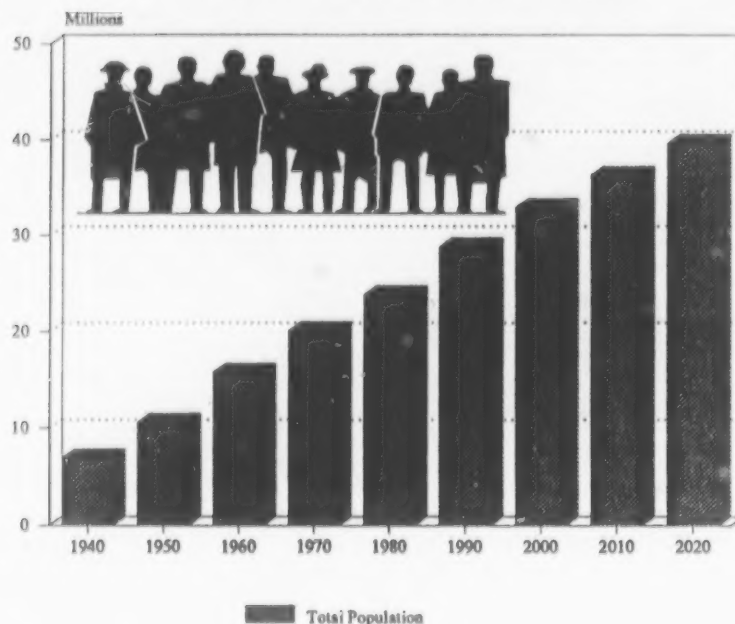
Continued Population Growth

Population growth in California will continue, but at declining rates. Most population growth will come from migration into the state, the greatest proportion of which is expected to come from legal and illegal immigration. This population growth will be distributed unevenly among California's fifty-eight counties.

FUTURE POPULATION SIZE

In absolute numbers, the growth of California's population will be phenomenal. Between 1980 and 2020, the state's population is expected to increase some 67 percent from 23.8 million to 39.6 million persons (See Exhibit 1). California, already the nation's largest state, will also become one of the more densely populated states. Specifically, population density will almost double between 1970 and 2020 from 128 to 253 per square mile.¹

Exhibit 1
CALIFORNIA POPULATION, 1940-2020



Source: Department of Finance, Demographics Unit, State of California, Sacramento, November 1988.

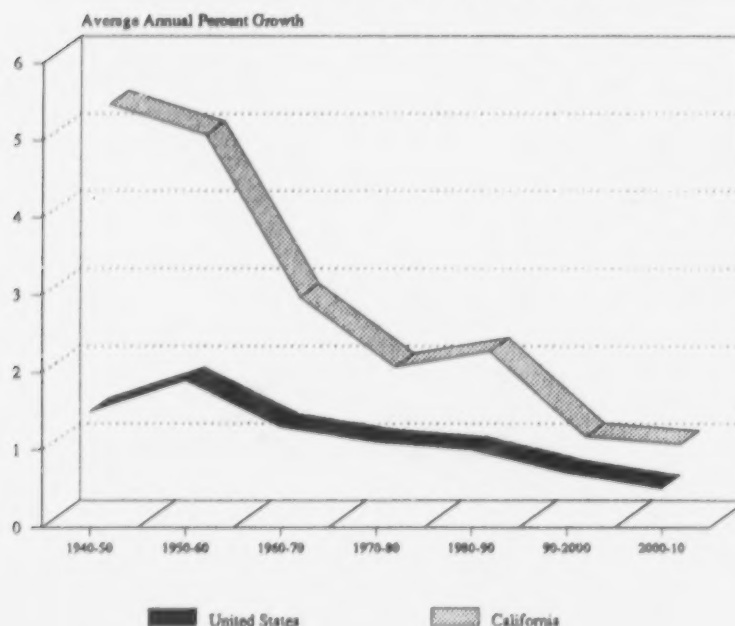
¹ *Statistical Abstracts of the United States, 1988*, Bureau of the Census, Washington, D.C., 1988, Table 21, pages 18 and 19.

RATE OF POPULATION GROWTH

Despite the addition of some 16 million people between 1980 and 2020, most forecasts expect California's growth rate to decline significantly. Specifically, the California Department of Finance projects the average annual state population growth rate to decline from 1.9 percent for the 1970-80 period to .9 percent for the 2000-2010 decade. While the growth rate decline is notable, it is minor compared to the decline from 5.3 percent to 1.9 percent annual rate between the decades of 1940-50 and 1970-80.

While population growth rates will decline notably, California growth rates will be significantly higher than the national average. Average annual growth rates for the nation are expected to be .7 and .5 percent for the decades of 1990-2000 and 2000-2010 compared to California growth rates of 1.0 and .9 percent for the same decades (See Exhibit 2).

Exhibit 2
COMPARISON OF POPULATION GROWTH RATES,
CALIFORNIA AND UNITED STATES



Source: Department of Finance, Demographics Unit, State of California, Sacramento, November 1988; *Statistical Abstracts of the United States, 1988*, Bureau of the Census, Washington, D.C., 1988, Tables 1 and 27, pages 7 and 23.

SOURCES OF POPULATION GROWTH

In the more immediate future, population growth during the next two decades is expected to be split between natural increases and net gains due to migration. For the period of 1970 through 1985, population growth was split almost evenly between these two sources.² However, fertility rates, death rates resulting from growth in the older population, and a persistent flow of immigration are expected to make net immigration the principle source of population growth.

Long-term projections to the year 2040 indicate that future population growth within California will come progressively from migration, most of which will take the form of immigration from other countries. Over the next five decades "natural" population increases resulting from the net difference between births and deaths are expected to dissipate to a replacement level.³ Under such conditions, population growth will increasingly result from net migration into the state. While unforeseen political and economic conditions may alter current forecasts, it is expected that most of this growth will come from legal or illegal immigrants who come directly from other nations or indirectly through other states.⁴

GEOGRAPHIC DISTRIBUTION OF POPULATION GROWTH

Population growth will not be even across the state. Lake County, the fastest growing county, will experience a 47 percent population increase between 1988 and 1997. In contrast, Marin County, the slowest growth area, will increase only 3 percent. For the most part, the most heavily populated counties of today are not expected to be the most rapidly growing counties of the next decade. The counties with the highest growth rates tend to be today's low population counties. These counties will grow rapidly, but they will not rival the major population clusters of the Los Angeles basin, San Francisco Bay Area, San Diego and Sacramento. The ten counties projected to be the largest in 1997 essentially represent these four population clusters. A decade from now they will constitute 73 percent of the state's population (See Exhibit 3).

² *California Statistical Abstracts, 1987*, State of California, Sacramento, 1988, Table B-1, page 12.

³ Natural population growth resulting from births minus deaths is expected to approach a replacement rate for two reasons. First, fertility rates are expected to gradually decline among all racial-ethnic groups to below replacement level. Second, the age distribution of the population will be shifted to older groups, creating a situation where deaths will more evenly counter-balance births (Leon F. Bouvier and Philip L. Martin, *Population Change and California's Educational System*, Population Reference Bureau, Washington, D.C., 1988, pages 59-62).

⁴ *Ibid.*

Exhibit 3
POPULATION GROWTH RATES OF CALIFORNIA
COUNTIES, 1978-87 AND 1988-97

County:	Actual Percent 1978-87 Growth:	Projected Percent 1988-97 Growth:	Projected 1997 Population:
Lake	70	47	74,800
Nevada	83	42	104,900
San Luis Obispo	44	39	281,200
Amador	56	37	34,700
Mariposa	51	36	19,000
San Benito	44	36	45,300
Riverside	58	36	1,246,500
Tuolumne	56	35	60,500
Madera	50	35	107,800
Calaveras	74	34	39,800
Merced	32	34	222,200
El Dorado	67	31	148,100
Placer	47	29	190,800
San Joaquin	41	29	575,000
San Bernardino	58	29	1,549,900
Kings	22	28	112,400
Tulare	28	27	370,100
Shasta	34	26	170,600
Alpine	33	25	1,500
Colusa	15	25	18,500
Imperial	26	25	136,200
Tehama	33	24	56,800
Butte	30	24	210,300
Solano	47	24	368,900
Kern	35	24	626,400
Santa Cruz	29	22	272,800
Stanislaus	33	21	395,600
Modoc	13	20	11,200
Trinity	27	20	16,300
Monterey	23	19	407,700
Ventura	32	19	750,100
Sacramento	30	19	1,128,800
San Diego	34	19	2,720,600
Sierra	13	18	4,000
Glenn	14	18	27,100
Mendocino	22	18	88,800
Fresno	23	18	703,400
Sonoma	30	17	412,700
Plumas	31	16	22,900
Sutter	23	16	69,800
Santa Barbara	18	16	397,300
Yolo	19	14	147,100
Orange	22	14	2,520,300
Napa	11	13	119,300
Contra Costa	20	13	843,900
Santa Clara	15	13	1,599,300
Mono	24	12	10,300
Yuba	17	11	61,700
Alameda	11	9	1,340,000
Lassen	37	8	28,500
Siskiyou	17	8	46,400
Del Norte	15	6	20,600
Los Angeles	17	6	8,990,400
Humboldt	6	5	119,500
San Mateo	7	5	653,900
San Francisco	8	5	776,300
Inyo	1	4	18,800
Marin	2	3	235,500
Total State:	23.8	14.7	31,733,100

Source: Department of Finance, Sacramento, November 1988.

Note: Ten counties projected to have the largest populations in 1997 are highlighted with bold print.

IMPLICATIONS FOR ADULT EDUCATION

The population bases for all California counties will continue to grow, some at remarkable rates. All else held constant, this will mean that Adult Education will have to serve larger populations. In the case of small but rapidly growing counties, high growth rates may put considerable pressures upon Adult Schools to expand and adjust their programs to meet the demands of their changing populations. This may be particularly true for small counties with no existing Adult Education system.

Population growth provides a context for assessing the demands to be placed on Adult Education. However, the characteristics of California's growing population will be more important than sheer population size. California's population is changing in composition as well as size, and these changes are likely to place new and greater demands on Adult Education.

Increasing Ethnic and Racial Pluralism

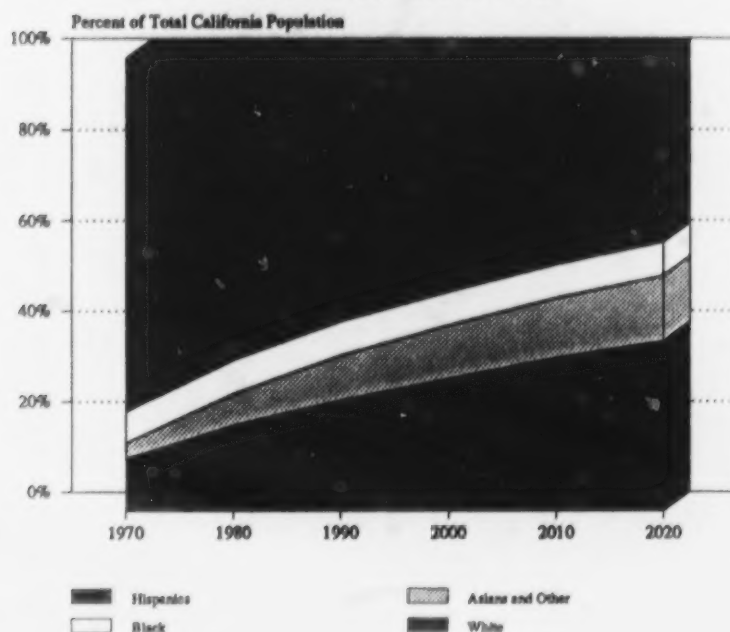
One of the most profound changes occurring in California's population is its head long rush to become the nation's first balanced multi-cultural state. Four great cultures and a multitude of racial groups are converging to create a society where no culture or race is the majority. California is well on the way to becoming a society shared by a people with roots deeply linked to Asian, Black, Anglo and Hispanic heritages.

AN OVERVIEW OF TOMORROW'S ETHNIC-RACIAL PLURALISM

Trends and projections provide a vivid picture of a profound march toward ethnic and racial pluralism. Specifically, the percent of the California population that is white and presumably of Anglo background is projected to decline from a majority of 78.0 percent to a minority of 40.6 percent between 1970 and 2020. As the white population shifts to minority status, it will not be replaced by a single majority ethnic-racial group. Rather, other ethnic and racial groups will emerge as larger minorities. Specifically, the California population of 2020 will be composed of 7.5 percent Blacks,

37.7 percent Hispanics, and 14.2 percent Asians and other ethnic-racial groups (See Exhibit 4).

Exhibit 4
ETHNIC-RACIAL COMPOSITION OF CALIFORNIA
POPULATION, 1970 TO 2020



Source: California Department of Finance, Sacramento, November 1988.

ORIGINS OF ETHNIC-RACIAL TRANSITION

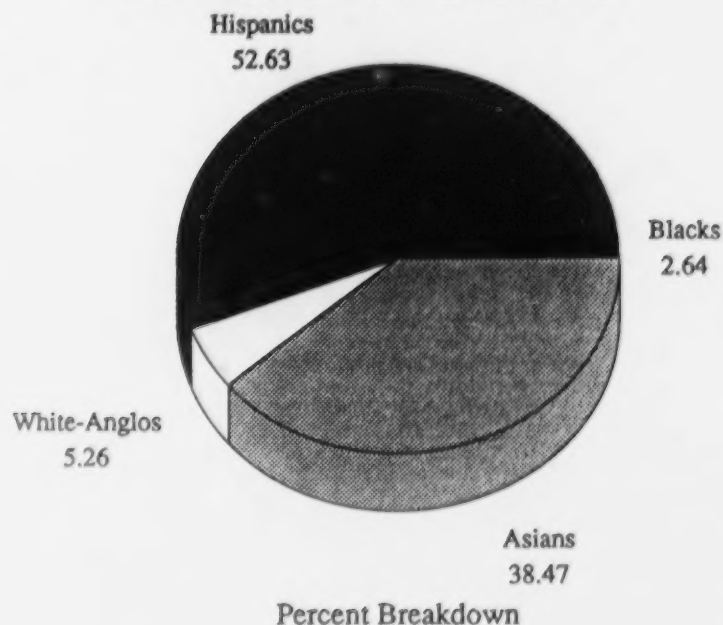
The root of this projected transformation of California's ethnic and racial make-up stems from a title wave of foreign immigration and higher than average birth rates among most emigrant populations once they arrive in California.

A recent Population Reference Bureau study estimated that for the foreseeable future there would be a net legal and illegal immigration of 190,000 persons a year. Approximately 35 percent of this inflow was estimated to be illegal, mostly from Mexico.⁵ This translates to a population increase of 1.9 million every decade from immigration alone, a figure accounting for half of the previously reported population growth of the 1980-1990 decade. The Population Reference Bureau study reports

⁵ Leon F. Bourier and Philip L. Martin, *Population Change and California's Educational System*, Op. Cit., pages 15-17 and 59-62.

that this estimate is "conservative" and other studies have estimated a much larger population growth from immigration.⁶ This study also estimates that 53 percent of this immigration will be from Hispanic origins, two-thirds of which come from Mexico. Some 39 percent are estimated to come from Asian nations, most notably Vietnam, China, Korea and the Philippines (See Exhibit 5).

Exhibit 5
ETHNIC-RACIAL CLASSIFICATION OF
IMMIGRATION INTO CALIFORNIA



Source: Leo F. Bouvier and Philip Martin, *Population Change and California's Educational System*, Population Reference Bureau, Washington, D.C., 1988, page 61.

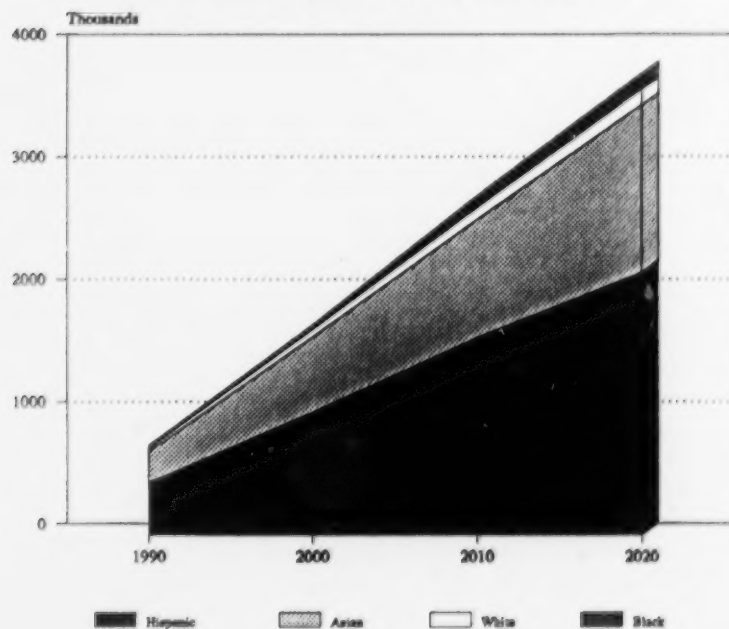
The impact of immigration upon California's population does not end with the arrival of foreigners. The birth rates of recently immigrated populations are commonly higher than those of the native population. The above noted Population Reference Bureau study estimates fertility rates for the native white population to average 1.7 children per women. Fertility rates for Blacks and Hispanics were estimated to be 2.3 and 3.0. Asian populations, which vary by country of origin, average over 2.0.⁷ This variation of fertility rates is expected

⁶ One study estimates that more than one million emigrants entered California illegally during the 1970's a figure accounting for an annual average of over 100,000 (Thomas Muller, *The Fourth Wave: California's Newest Immigrants*, The Urban Institute, Washington, D.C., 1984, page 6).

⁷ Leon F. Bouvier and Philip L. Martin, *Op. Cit.*, page 59.

to converge to under 2.0 by 2030. In the meantime, the combined impacts of higher birth rates among non-white ethnic and racial groups and direct immigration will fuel the shift toward a pluralistic future. More specifically, by the year 2000 one quarter of all California Hispanics and almost half of all Asians between ages 3 and 24 will be immigrants or the children of immigrants who come to the state after 1980 (See Exhibit 6).⁸

Exhibit 6
POST-1980 IMMIGRANTS AND DESCENDENTS IN
THE CALIFORNIA POPULATION



Source: Leo F. Bouvier and Philip L. Martin, *Population Change and California's Educational System*, Population Reference Bureau, Washington, D.C., 1988, page 17.

The impacts of immigration on California's ethnic-racial make-up promises to have implications without parallel in U.S. history. Past waves of immigration were greater. But world wars and the passage of restrictive legislation have cut and regulated population growth from this source. This has allowed time for assimilation and social adjustment. Legal and illegal immigration to California is different. There is no end in sight, and there will be no rest periods as different cultures learn to live with each other.

⁸ *Ibid.*, page 15-16.

IMPLICATIONS FOR ADULT EDUCATION

The implications of California's changing ethnic-racial profile on Adult Education is likely to be more indirect than direct. Critical indirect impacts will stem from differences of educational achievement among non-white ethnic-racial groups and high rates of deficiency with English among Asian and Hispanic groups. These impacts will be discussed in a later section dealing with skills and English proficiency. Another impact will stem from the massive effort to naturalize illegal immigrants under the *Immigration Regulation and Control Act* (IRCA). This will also be discussed later. The direct impacts are likely to stem from cultural differences among ethnic-racial groups. Growing diversity will create new demands for effective and flexible methods for delivering adult education services. Finally, California's growing cultural diversity may cause many native English speaking persons to study a second language.

An Aging Population

Changes in age distribution of California's population promise to be as significant as the push toward ethnic and racial pluralism. The average age of California's population is increasing as a large and healthy "baby boom" generation grows older. Coming years will see the proportion of persons age over 65 swell, most likely to proportions significantly greater than most forecasts. This trend will place great strains on society's institutions, including adult education.

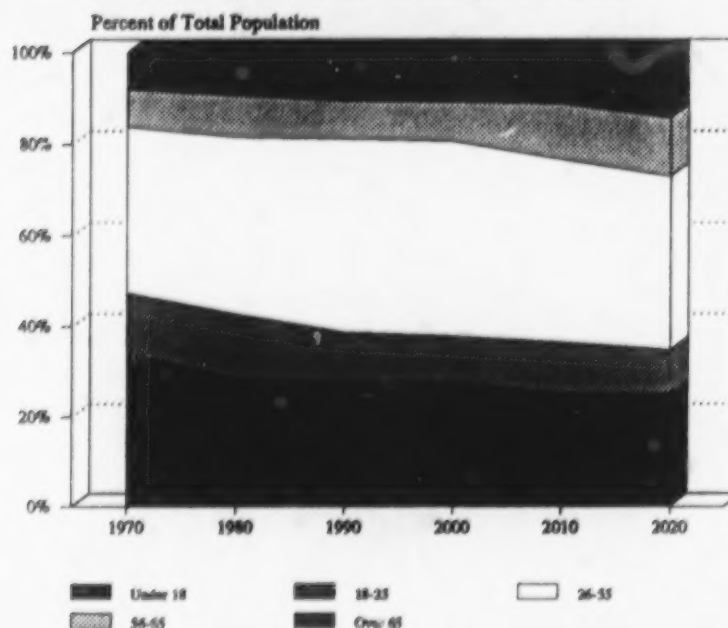
PROFILE OF AN AGING POPULATION

Demographic conditions set in motion by birth rates of past decades will cause California's population to be skewed increasingly toward an aging workforce and ultimately a disproportionately large retirement population. The large post-World War II "baby boom" generation is now in its 30's and 40's. In two decades, they will approach retirement age. This trend, coupled with increasing life expectancy and a relatively small population of youth and young adults will cause profound changes in the age profile of California and the nation.

The proportion of the California population over age 65 is commonly expected to grow from 8.1 percent in 1970 to 14.4

percent in 2020. Over the same time period, the proportion of the population under age twenty-five will slip from 47.4 percent to 34.9 percent, and the average age of the population will rise from 31 to 44 years (See Exhibit 7).

Exhibit 7
CALIFORNIA POPULATION BY AGE



Source: Department of Finance, State of California, Sacramento, November 1988.

It is noteworthy that California age distribution trends will vary somewhat from national trends concerning the proportion of youth and young adults. For example, some 37.8 percent of California's population will be under age 25 in comparison to 33.9 percent for the nation.⁹ For the most part, this can be attributed to the influx of immigrant populations and higher birth rates among a growing non-white population.

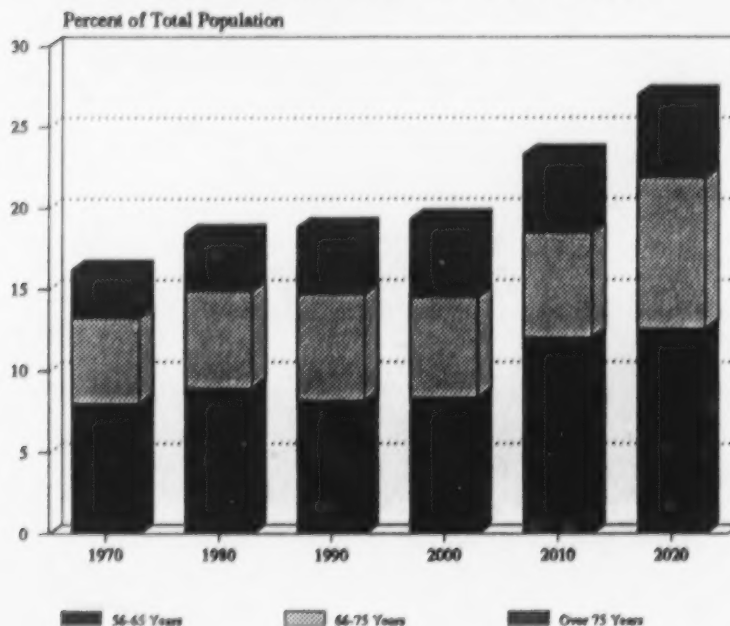
GROWTH OF THE VERY OLD

One of the most important population trends is the growth of the "very old" population. The proportion of persons over age 65 will grow dramatically, but the percent of those over 75 will grow even more. Between 1985 and 2000 the California

⁹ *Statistical Abstracts of the United States, 1988*, Bureau of the Census, Washington, D.C., 1988, Table 16, page 15.

population over 85 will increase 81 percent compared to an increase of 59 percent for those aged 75 to 85 and 30 percent for those aged 70 to 74.¹⁰ Projections from the California Department of Finance show that those over age seventy-five will expand from 3.0 percent of the population in 1970 to 5.2 percent in 2020. Subsequent years are expected to show even more dramatic increases of this age group (See Exhibit 8).¹¹

Exhibit 8
CALIFORNIA POPULATION OVER AGE 55



Source: Department of Finance, State of California, Sacramento, November 1988.

Growth of the over 75 age group stems from two principle causes. First and foremost, life expectancy is increasing due to better health standards and medical care. Second, large age groups are aging. This second factor will not really have its full impact until 2040, when the "baby boom" generation begins to reach age 75. For the most part, growth of the over 75 age group over the next three decades will come primarily from increasing longevity.

Growth of the "very old" population due to increased longevity may be greater than indicated by government

¹⁰ *Population Projections for California Counties, 1980-2020 With Age and Sex Detail to 2020*, Department of Finance, State of California, Sacramento, 1983.

¹¹ Leon F. Bourvier and Philip L. Martin, *Op. Cit.*, pages 49-52.

projections. A recent study conducted by the National Institute of Aging and the University of Southern California indicates that life expectancy may be increasing far more rapidly than Bureau of Census estimates. This study draws upon recent data showing a surge in longevity, and postulates that healthier life styles and medical advances are leading to a 2 percent annual increase in life expectancy. They predict that the average life expectancy in the year 2040 will be five to eight years longer than the most optimistic census projections (See Exhibit 9). If these projections prove to be true, most people who reach age 65 will also surpass age 85 (See Exhibit 10). The implications for future growth of the over 75 and over 85 age groups is earth shaking. Specifically, there will be 29.6 percent or 19.8 million additional persons over age 65; and 83.2 percent or 10.7 million more persons over age 85.¹²

Exhibit 9

PROJECTED LIFE EXPECTANCY BY 2040
Alternative Projections for United States

Life Expectancy Projection:	Male:	Female:
Census Bureau (High Mortality)	72.7	80.3
Census Bureau (Moderate Mortality)	75.0	83.1
Census Bureau (Low Mortality)	77.8	86.7
NIA-USC Estimate (Very Low Mortality)	85.9	91.5

Source: Ethel Percy Andrus Gerontology Center, University of Southern California, Los Angeles, 1988.

Exhibit 10

PROJECTED PERCENT OF POPULATION OVER AGE
65 UNDER ALTERNATIVE LIFE EXPECTANCY
PROJECTIONS FOR THE YEAR 2040

Life Expectancy Projection:	Total:	Male:	Female:
Census Bureau (Moderate Mortality):			
65 to 74 Years Age	43.7	49.3	39.8
75 to 84 Years Age	37.1	36.8	37.4
Over 85 Years Age	19.2	13.9	22.8
NIA-USC Estimate (Very Low Mortality):			
65 to 74 Years Age	37.0	39.9	34.6
75 to 84 Years Age	36.0	36.3	35.7
Over 85 Years Age	27.1	23.8	29.7

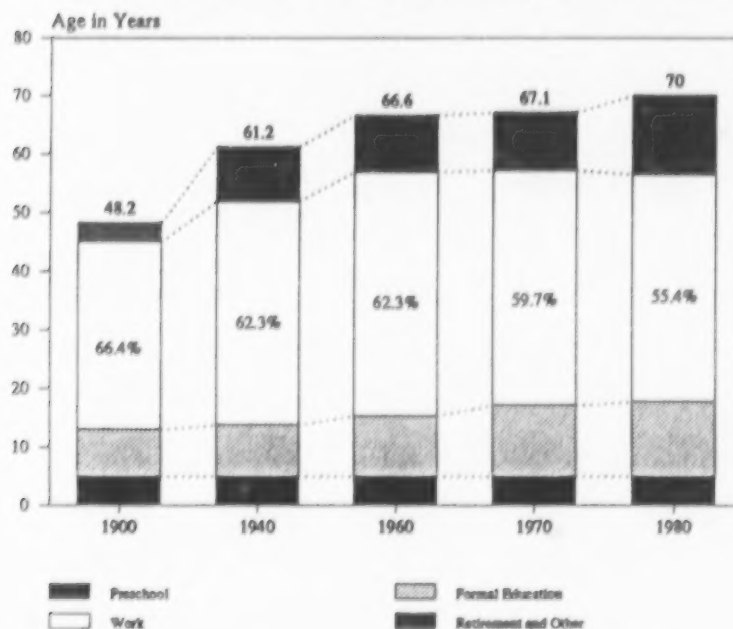
Source: Ethel Percy Andrus Gerontology Center, University of Southern California, Los Angeles, 1988.

¹² Jack M. Guralnik, Machiko Yanagishita and Edward L. Schneider, "Projecting the Older Population of the United States: Lessons From the Past and Prospects for the Future", Ethel Percy Andrus Gerontology Center, University of Southern California, Los Angeles, 1988.

LIFE CYCLE TRENDS

Increases in longevity, coupled with retirement policies encouraging even earlier departures from work, and expansion of educational opportunities during youth are producing a progressively rigid lockstep from education in youth, to work in mid-life, and finally to retirement in old age (See Exhibit 11).

Exhibit 11
LIFETIME DISTRIBUTION OF EDUCATION, WORK
AND LEISURE FOR U.S. MALES, 1900-1980



Source: Worklife expectancy figures (number of years in labor force) obtained from Howard N. Fullerton and James J. Byrne, "Length of Working Life for Men and Women, 1970," *Monthly Labor Review*, February 1976, pp. 31-33; Howard N. Fullerton, "A table of expected working life for men, 1968," *Monthly Labor Review*, June 1971, pp. 49-54 and *Statistical Abstracts of the United States, 1988*, Bureau of the Census, 1988, Table 606, page 364. Life expectancy figures (at birth) obtained from *Statistical Abstracts of the United States, 1974* (Washington, Bureau of the Census, 1975), p. 55 and *Statistical Abstracts of the United States, 1988*, Bureau of the Census, 1988, Table 107, page 71. School years (completed for persons over 25) obtained from *Digest of Educational Statistics for 1975* (Washington, U.S. Department of Health, Education, and Welfare, Office of Education, 1975), pp. 14-15 and *Statistical Abstracts of the United States, 1985*, Bureau of the Census, 1985, Table 216, page 136.

The expansion of school years during youth and years for retirement in the later part of life have compressed the number of years given to work into a smaller and smaller portion of the

lifespan.¹³ Specifically, the proportion of the total life span given to work in the mid-years by the average male has declined from 62.3 to 55.4 percent between 1940 and 1980.

The compression of work into a smaller and smaller portion of mid-life has intensified dramatically over the last 50 years. While long-established trends are generally the best predictor of the future, they can also point to a breaking point. Many of the economic and social forces that fostered this life pattern no longer exist.¹⁴ New social forces such as changing family life, new values toward work and leisure, the need for recurrent education throughout life, and the mounting economic costs of today's retirement policies may push individuals and society into new life patterns that more flexibly mix education, work and leisure throughout all stages of life.¹⁵

IMPLICATIONS FOR ADULT EDUCATION

The changing age profile of California's population has important implications for adult education.

First, our aging population will increase the share of resources required for retirement pensions and health care. These mounting costs will generate fierce competition between generations for economic resources. Education, including adult education, may be progressively challenged for resources.

Further, changing age distributions will cause the proportion of working aged adults to decline relative to dependent children and retired persons. The "dependency ratio" of non-workers to workers will decline from 1.6 in 1970 to 1.5 by 2020, and fall still further after that year. If living standards are to be maintained and the California economy kept strong, the working adult population must have full access to the education and training necessary to build competitive skills.

The changing age profiles of California and the nation are also likely to increase the demand for educational services to meet the needs of an aging and older population. Health, exercise and preventive medicine courses are likely to be in greater demand. Perhaps more important, increasing health and longevity coupled with the need to develop new skills are likely to intensify the need for career-change guidance and vocational retraining.

¹³ The data on lifetime distribution of education, work and leisure has been restricted to males because the transitional status of women between employment and housekeeping does not allow development of meaningful summary statistics for both sexes.

¹⁴ Fred Best and Barry Stern, "Education, Work and Leisure: Must they come in that order?", *Monthly Labor Review*, July 1978.

¹⁵ Fred Best, *Flexible Life Scheduling Breaking the Education-Work-Retirement Lockstep*, Praeger Publishers, New York, 1981.

Finally, California's changing age profile will impact the supply of teachers. Large portions of today's teachers are approaching retirement age.¹⁶ Many K-12 schools confront a situation in which half their teachers may have to be replaced during the next decade.¹⁷ These conditions are also likely to impact the supply of teachers for adult education. When attrition due to retirement is combined with the reluctance of today's younger generation to enter teaching,¹⁸ Adult Schools may find it increasingly difficult to recruit and retain qualified teachers.

Changes in Family Life and Parenthood

The emergence of the working woman as the norm rather than the exception has catalyzed fundamental changes in the family and the lifestyles of most Americans. On a national level, the percent of working age women who participate in the labor force has increased from 43.9 to 55.3 percent between 1972 and 1986, and is projected to reach 61.5 percent by 2000. In comparison, the labor force participation rates of men were 76.3 percent in 1986, and projected to be 74.7 percent in 2000.¹⁹ Similar trends exist for the California population.

With the increase of women workers have come dual earner families, and a new calculus of living for both men and women. The seventies and eighties have also given rise to growing numbers of single parent households, caused by separation of spouses or teenage pregnancies. These trends are making life more complex and less flexible for a growing number of working age Californians, a condition that has important implications for both the content and delivery of adult education.

TODAY'S FAMILIES AND PARENTS

In 1987, there were 9.9 million households in California. Some 2.3 million of these are single households, 5.5 million are married couples with or without children, .9 million are single parent households, and the remaining 1.2 million

¹⁶ Helen Cagampang, Walter Gerns, Todd Greenspan and James Gutherie, *Teacher Supply and Demand in California: Is the Reserve Pool a Realistic source of Supply*, Policy Analysis for California Education, Berkeley, August 1986.

¹⁷ *A Nation Prepared: Teachers for the 21st Century*, Task Force on Teaching as a Profession, Carnegie Forum on Education and the Economy, May 1986, page 10.

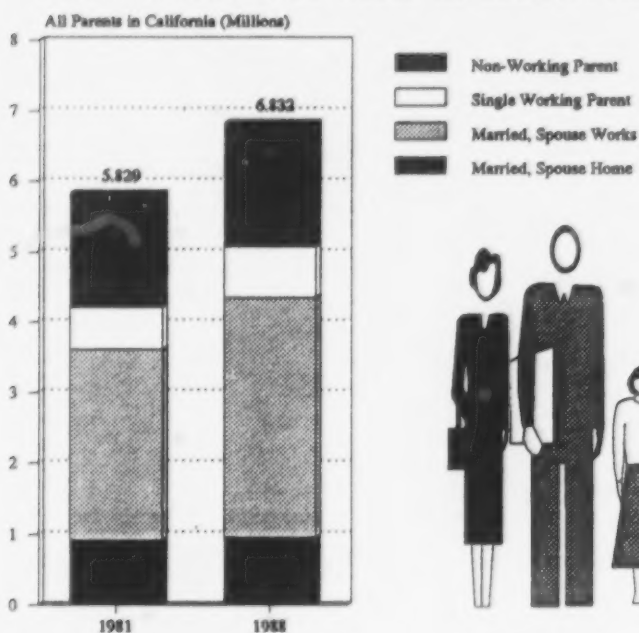
¹⁸ Tom Hayden, "A Disquieting Survey of Recent Berkeley Graduates," *Sacramento Bee*, February 25, 1987, page B-9.

¹⁹ Howard Fullerton, "Labor Force Projections: 1986 to 2000," *Monthly Labor Review*, September 1987, page 21.

represent miscellaneous living arrangements. Some 3.8 million or 38 percent of these households have dependent children. Approximately 6.7 million or 39 percent of the 17.3 million Californians between the ages of 18 and 65 are parents of dependent children.²⁰

Parenting, whether it be undertaken by men or women, is increasingly balanced against the demands of work. Parenting and the work years occur during the same stage of the life cycle, and most parents work. Some 5.1 million or 74.4 percent of all California parents with children under 18 worked in 1988. In 1981, the proportion of parents that work was 72.5 percent, suggesting that the prominence of combined working and parenting is likely to increase further in coming years (See Exhibit 12).

Exhibit 12
WORKING PARENTS WITH CHILDREN UNDER 18



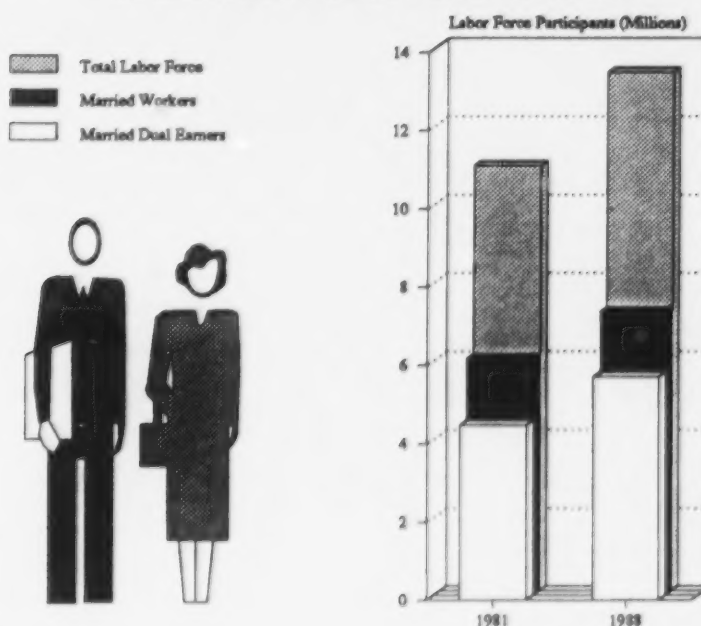
Source: Current Population Survey, Department of Finance, State of California, Sacramento, March Supplements, 1981 and 1988.

It is also important to note that the spouses of most married workers are also employed. In 1988, some 78.5 percent of all married workers had working spouses, up from the 73.9 percentage of 1981 (See Exhibit 13). With or without

²⁰ Data calculated from a California breakdown of the March 1987 Supplement of the Current Population Survey, provided courtesy of the California Department of Finance.

children, personal time and logistical constraints are greater when both spouses shoulder the responsibilities of holding a job.²¹ Children clearly increase these constraints. In 1988, 73.3 percent of California's "dual earner" couples had children under age 18, and 29.0 percent had children under the age of six.

Exhibit 13
CALIFORNIA LABOR FORCE BY MARITAL STATUS,
AND EMPLOYMENT OF SPOUSE, 1988



Source: Current Population Survey, Department of Finance, State of California, Sacramento, March Supplements, 1981 and 1988.

SINGLE PARENTS AND TEENAGE MOTHERS

California has two growing sub-sets of families that merit special attention. These partially overlapping subsets are single parent households and teenage parents.

In 1987, California had 900,100 single parent households. Single parent households in the state grew from 8.5 percent in 1978 to 9.1 percent in 1987. About four-fifths of these single parents are women, and 80.1 percent are working. Over 40

²¹ Howard Hayghe, "Families and the Rise of Working Wives", *Monthly Labor Review*, May 1976, pages 12-19; Fred Best, "Changing Sex Roles and Worklife Scheduling", *Psychology of Women Quarterly*, Winter 1980; and Janet Zollinger Grele, "Changing Sex Roles and Family Structure", *Social Policy*, January-February 1979.

percent of these working single parents have children under 12 years of age.²²

Teenage parents, who may be living with their own families or as single parents, represent a small but important category of families. California is reported to have the second highest adolescent pregnancy rate in the nation.²³ Approximately 140,000 California girls become pregnant each year and about 30,000 of these carry to full term.²⁴ Many of these births are given up to adoption, but many of these young mothers become children with children. They tend to be disproportionately minority, have average incomes far below the average, and commonly drop out of school.

IMPLICATIONS FOR ADULT EDUCATION

California's changing pattern of family life has important implications for adult education.

First and foremost, the logistical problems that confront working parents underscore the need for developing educational delivery systems that cater to adults who have limited flexibility for choosing the time and location of their studies. Parenting and work have become an increasingly simultaneous undertaking. Adult education, no matter how valuable it might be, will be useless to adults who must choose between attending such programs and holding a job or caring for their children. In addition to flexible scheduling and location of courses, new ways must be found to provide child care to parents who wish to participate in educational programs.

Second, the changing face of California's families have implications for the content of adult education. Teenage parents who have left school and taken adult responsibilities before they have adult skills will require intensive educational support for both basic skills and coping with their particular problems. Similar needs may also exist for "displaced homemakers" who become single parents. Courses on parenting and child care, as well as domestic skills such as cooking and home maintenance are also likely to be in demand among parents.

²² These figures have been developed through a special analysis of the March 1988 Supplement of the Current Population Survey, provided courtesy of the Department of Commerce.

²³ An estimated 14 percent of teenage girls become pregnant and about one-fourth to one-third of these give birth to a child (*Mom, Dad I'm Pregnant: A Special Report on Adolescent Pregnancy*, Senate Office of Research, California State Senate, Sacramento, October 1984, page 3).

²⁴ *Data Matters: Topical Reports*, California Department of Health, Center for Vital Statistics, Advanced Report: California Vital Statistics, June 1984, Table 4, page 11.

Work and Workers in Transition

Pushed by international competition and fueled by technological innovation, California is leading the nation into a post-industrial era of "high-tech" industries and a staggering diversity of services. This change is not occurring overnight, but it is relentless. Just as the archetype work setting has already moved from the work bench and factory floor to the office desk and telephone, tomorrow's work setting will become the micro computer with a "desktop" screen and service desks supported by international information technology.²⁵ Today's workers must better prepare themselves to be productive in tomorrow's economy, and adult education will be a critical component in that task.

TOMORROW'S EMPLOYMENT OPPORTUNITIES

The goals of tomorrow will shift progressively into new industries and new occupations. Economic fluctuation will temper expectations, but barring major economic collapse, this shift will continue. Future changes may be accelerated by global economic forces and recent technological advances. However, they remain part of a long historic trend which moved workers first from the farm to the factory, then from the shop floor to the office, and now to work settings linked more by electronic linkages than halls and rooms.²⁶

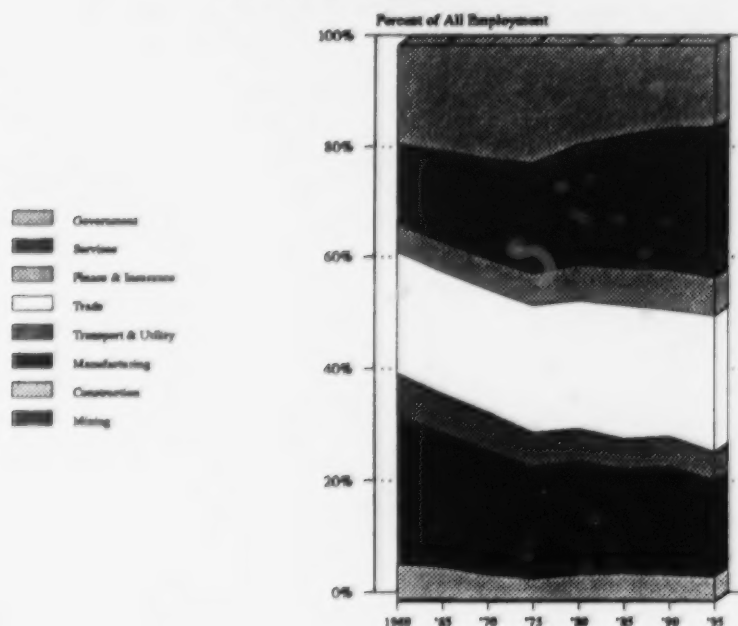
This long-term transition is reflected in state and national employment projections. The California work force has already left the farm. California remains an agricultural power due to technologically supported productivity, but scarcely, 3 percent of the state's workers hold jobs in this sector. Technological change coupled with international competition are also shrinking the ranks of the manufacturing work force. Specifically, manufacturing workers as a percent of all workers declined from 26.9 percent in 1960 to 18.9 percent in 1985, and the proportion is projected to shrink to 17.6 percent by 1995 (See Exhibit 14). Service and information industries have been and will be the growth sectors. Employment in the

²⁵ Fred Best, "Preparing California's Workforce for the Jobs of the Future", in Howard Didsbury (Editor), *The World of Work Careers and the Future*, World Future Society, Washington, D.C., 1983.

²⁶ Many social forecasters believe that we are moving away from office settings and toward "telecommuting" and "flexipace" arrangements linked by computers and advanced telecommunications (Alvin Toffler, *The Third Wave*, Bantam Books, New York, 1980). While such arrangements may be important models of long term changes, change in the future is likely to focus on an increasingly sophisticated "electronic office" (Fred Best, "Technology and the Changing World of Work", *The Futurist*, April 1984, pages 61-66).

service sector is predicted to climb from 14.5 percent in 1960 to 27.4 percent in 1995 (See Exhibit 14). Jobs in the service sector will vary tremendously, ranging from housekeepers to lawyers. Other growth sectors will include trade, finance, insurance and real estate (See Exhibit 14).

Exhibit 14
DISTRIBUTION OF CALIFORNIA EMPLOYMENT BY
INDUSTRY, 1960 TO 1995



Source: *California Statistical Abstracts, 1987*, Department of Finance, Sacramento, 1988, Table c-3, page 24; and *Projections of Employment, 1985-1995*, Employment Data and Research Division, Employment Development Department, Sacramento, 1988.

Note: These projections do not report agricultural and farm occupations, which provide jobs for approximately 3 percent of the work force.

Occupations of employment will also shift to reflect the changing prominence of industries and the technologies used by industries. In broad-brush strokes, the greatest number of job openings will be created in professional and technical occupations. A combination of craft and factory occupations will create the second largest number of jobs, but at a much slower growth rate. Service occupations come third in total job creation, but at a much faster growth rate than crafts and factory occupations (See Exhibit 15).

Exhibit 15
DISTRIBUTION OF CALIFORNIA EMPLOYMENT BY
GENERAL OCCUPATIONAL GROUPS, 1985 TO 1995

Occupational Group:	1985:	1995:	Percent Change:
Number of Jobs:			
Professional & Technical	2,245,080	3,069,330	36.7%
Managers & Officials	687,310	910,500	32.5%
Sales	1,201,680	1,603,900	33.5%
Clerical & Support	2,373,020	2,904,390	22.4%
Crafts & Trades	1,219,050	1,506,400	23.6%
Operatives	1,155,770	1,397,700	20.9%
Service	1,592,840	2,157,470	35.4%
Laborers & Helpers	386,330	483,370	25.1%
Agricultural & Forestry	103,000	138,420	34.4%
Total Jobs:	10,964,080	14,171,480	29.3%
Percent of Total Jobs:			
Professional & Technical	20.5%	21.7%	
Managers and Officials	6.3%	6.4%	
Sales & Related	11.0%	11.3%	
Clerical Workers	21.6%	20.5%	
Crafts and Kindred	11.1%	10.6%	
Operatives	10.5%	9.9%	
Service Workers	14.5%	15.2%	
Laborers, Except Farm	3.5%	3.4%	
Agricultural & Forestry	.9%	1.0%	
Total Percent:	100.0%	100.0%	

Source: Projections of Employment, 1985-1995, Employment Data and Research Division, Employment Development Department, Sacramento, 1988.

Note: These projections under-estimate agricultural and farm occupations, which provide jobs for approximately 3 percent of the work force.

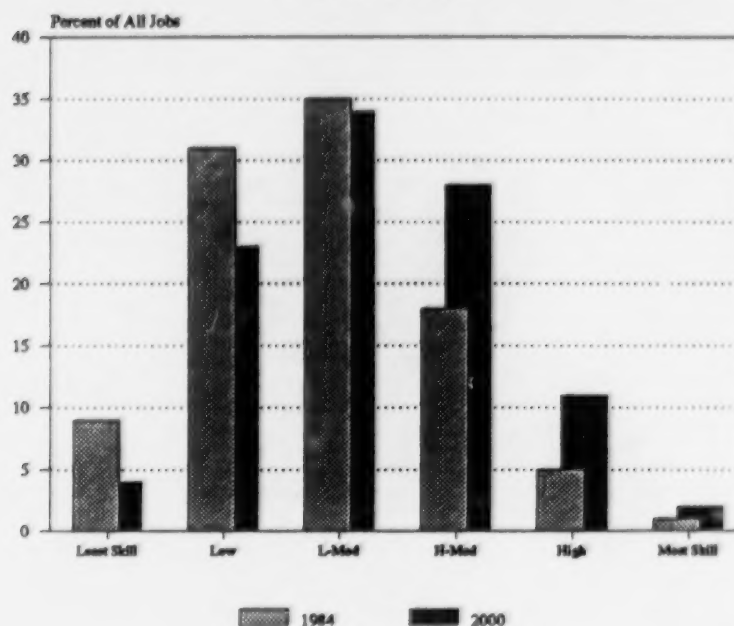
CHANGING SKILL REQUIREMENTS

California's changing occupational profile promises to increase the basic skill requirements of most new jobs, and new technologies promise to alter the skills required within long-established occupations.

A recent national study conducted by the Hudson Institute for the U.S. Department of Labor found that the basic skills required for the growth occupations of the future will require significantly higher levels of basic education. The median years of education required for employment in 2000 will be 13.5 percent compared to 12.8 percent in 1984.²⁷ Specifically, some 40 percent of employment in 1984 was found in lower skilled occupations, and only 27 percent of the jobs of the year 2000 will be in lower skilled occupations. Conversely, 41 percent of the jobs of 2000 will be in higher skilled occupations compared to 24 percent in 1984 (See Exhibit 16).

²⁷ William Johnston and Arnold Packer, *Workforce 2000: Work and Workers for the 21st Century*, Hudson Institute, Indianapolis, 1987, pages 96-101.

Exhibit 16
DISTRIBUTION OF JOBS BY SKILL LEVEL GROUPS,
1984 AND 2000



Sources: *Workforce 2000: Work and Workers for the 21st Century*, Hudson Institute, Indianapolis, June 1987, pages 96-101.

The job skill requirements of the future will not only be higher, they will be different. New occupations are being created with new skill requirements. Further, new technologies and working conditions are shifting the job specific skills within jobs that retain the same title. For example, the occupational category of secretary has remained a constant fixture in offices across the nation. But the job, and the skills it requires are not the same as it was ten, not to mention twenty years ago. Requirements have shifted from use of ditto machines to photocopy machines, and recently from use of typewriters to the micro computer with a myriad of software tools (See Exhibit 17).

Finding, let alone keeping, a job in the 1990's and 21st Century will be like aiming at a moving target. Workers and the institutions that provide them with training must maintain high standards and be up-to-date.

Exhibit 17

**COMPARISON SKILL REQUIREMENTS FOR
SECRETARY FROM 1983 EMPLOYER SURVEY AND
1977 DICTIONARY OF OCCUPATIONAL TITLES
(Skills Cited for Secretary, DOT Code 201.362-030)**

Technical Skill Requirements:	Percent Positions Filled:	Percent Firms Surveyed:
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Data Cited from 1977 DOT Description:

*Typing (601002, 603000, 603014)	NA	NA
*Shorthand, Letter Dictation (604000)	NA	NA
*Use Elec Typewriter with Memory (617083)	NA	NA
*General and Specific Writing Skills (304000)	NA	NA
Record Minutes of Meetings	NA	NA
Mail, Screen Visitors, Scheduling (605000)	NA	NA
Information Management and Transfer	NA	NA
Transcription of Notes and Minutes	NA	NA
Maintain Records, Prepare Reports (60700)	NA	NA
Make Copies, Use Photocopy Mach (617089)	NA	NA

Data Cited from 1983 Employer Survey:

*Typing (601002, 603000, 603014)	100.0	100.0
*Shorthand, Letter Dictation (604000)	73.3	50.0
*Use Elec Typewriter with Memory (617083)	73.3	25.0
*General and Specific Writing Skills (304000)	96.7	75.0
Filing, Sorting, Retrieve Documents (602009)	73.3	25.0
Cost, Output, Inventory Accounting (607310)	73.3	25.0
Use Telephones and Switchboards (618096)	3.3	25.0
Use Applied Computer Software (629000)	73.3	25.0

Source: DOT data from text review of occupational description from the *Dictionary of Occupational Titles*, U.S. Department of Labor, Washington, D.C., 1977, page 153. Survey data cited from exploratory random survey of 59 firms from the Los Angeles metropolitan area conducted during August 1983 (Fred Best and Sherry Bell, *Labor Demand Forecasting for Los Angeles: Can Existing Systems be Improved?*, Los Angeles Business Labor Council, Los Angeles, September 1983). A standard coding system was used to code data from both sources.

* Designates skill requirements cited by both the DOT and 1983 employer survey.

DISPLACEMENT AND CAREER CHANGE

As in the past and present, workers of the future will change jobs and careers. Some of this change will be self-chosen and some will result from economic forces beyond the control of the individual.

The average American worker changes jobs some twelve times during his or her worklife. Much of this change is internal change within the same organization or voluntary job change from one employer to another.

More cathartic changes take the form of involuntary job loss, either temporary or permanent. Intense concern about "displaced workers" during the 1980's have lead many to be concerned about similar problems in the future.

Some of those expressing such concerns have postulated that automation and other forms of technological change will rampantly displace workers. While one cannot state "iron laws" about the future of job displacement due to technology, economic history tends to refute this fear in most cases. Prevailing opinion is that technological displacement is an exception, rather than the rule. The root of this assumption is that technological innovation allows workers and firms to produce greater amounts of better quality goods and services at lower costs. Firms can therefore sell products at lower prices, which causes consumers to buy more. This in turn requires employers to hire more workers to produce more. For example, after Henry Ford initiated the use of assembly line technology in his auto plants, he was able to reduce the work time required to produce a new car by 56 percent between 1910 and 1920. This led to a 62 percent reduction in the price of his cars to consumers. Buyers who previously could not afford a car flocked to his show rooms. Sales increased ten times and employment in the Ford Motor Company grew from 37,000 to 206,000 in just ten years.²⁸

In today's world, loss of jobs generally stems from a lack of economic competitiveness, in many cases on an international scale. For the most part, the absence or presence of significant job displacement in future years is likely to be determined by whether we are able to train skilled and motivated workers, then provide them with the technology to be competitive.

THE EMERGING LABOR SHORTAGE

On a national level, demographic trends have caused a concern about growing shortages of entry-level labor in coming decades. The basis of this concern is that the age group following the large "baby boom" generation is smaller. As a result, there will be fewer entry level workers in coming years.

For California, the demographic causes of labor shortages are not as alarming. Coming years will see a clear dip in the number of entry level workers. However, the labor supply impacts will not be as serious because international immigration and high birth rates among the non-white population have contributed to a younger population that is larger than the national average (See Exhibit 7).

²⁸ Richard Vedder, *Robotics and the Economy*, Staff Study, Subcommittee on Monetary and Fiscal Policy, Joint Economic Committee, U.S. Congress, Washington, D.C., March 26, 1982, pages 26.

Unfortunately, California is likely to experience another form of labor shortage - the lack of workers with skills to perform jobs. Disproportionate numbers of California's younger population come from minority and immigrant backgrounds which have been deficient in English and other basic skills required for most jobs. Thus, the California economy will likely confront a shortage of skilled workers, not a shortage of people wanting work.

IMPLICATIONS FOR ADULT EDUCATION

Changes in the labor market and the world of work have powerful implications for adult education.

First and foremost, study after study indicates that the basic skills required for most jobs of the future will be significantly higher than those required today. If tomorrow's adult population does not have adequate skills, adult education will be one of the primary vehicles for upgrading the workforce to meet economic needs.

Second, a shifting occupational and industrial structure coupled with significant skill requirement changes within established occupations indicates that adults will have to continually update their skills.

Third, ongoing voluntary career changes and the specter of unemployment will foster the need for significant "retooling" on the part of many workers. In some cases, this may require a major retraining effort. In other cases, perhaps the majority of job changing adults, this will require educational services such as career education, job search methods, and targeted job training based on individual assessment.

Polarities of Education and Skills

In overview, the educational attainment and skill level of the California population is on par with the national average. Average educational attainment for both the Nation and our State is about 12.5 years of education for adults over the age of 25 years,²⁹ with some indications that California leads the nation in certain areas of educational achievement.³⁰ At the

²⁹ State estimates come from breakdowns of recent Current Population Survey (CPS) data provided courtesy of the Department of Finance. National data is cited from *Statistical Abstracts of the United States, 1988*, Bureau of the Census, Washington, D.C., 1988, Table 201, page 125.

³⁰ For example, 1980 Decennial Census data indicates that 42 percent of the California population over age 25 attained more than 4 years of high school as compared to 31.9 percent for the nation *Statistical Abstracts of the United States, 1985*, Bureau of the Census, Washington, D.C., 1985, Table 215, page 135.

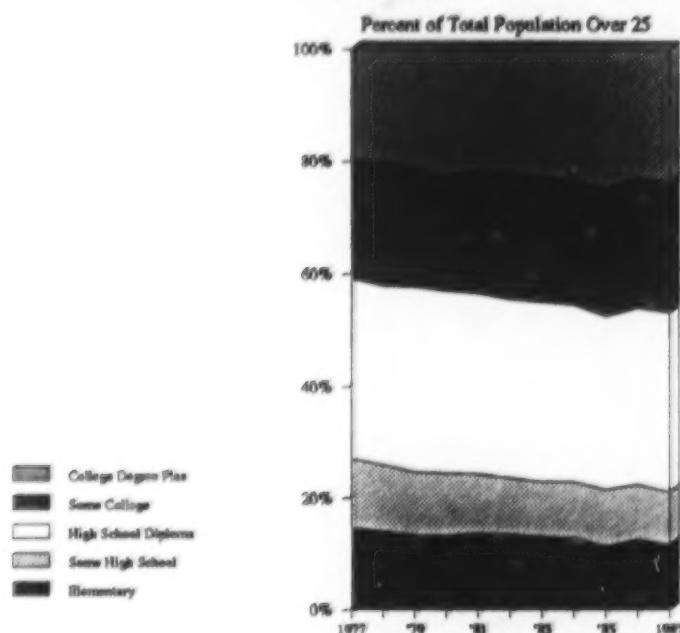
same time, there are sobering indications that an alarming proportion of the California population beyond the K-12 years is seriously lacking in the basic skills needed to be productive and self-sufficient.

AN OVERVIEW OF EDUCATIONAL ACHIEVEMENT

The general trend of educational attainment is upward in the state. In 1977, some 14.8 percent of adults over age 25 had completed no more than 8 years of school. By 1987, this group had declined to 11.9 percent. At the other end of the educational spectrum, some 23.5 percent had completed four years or more of college in 1987 as compared to a lower 19.5 percent in 1977 (See Exhibit 18).

Exhibit 18

DISTRIBUTION OF EDUCATIONAL ATTAINMENT FOR CALIFORNIA POPULATION OVER AGE 25, 1977 TO 1987

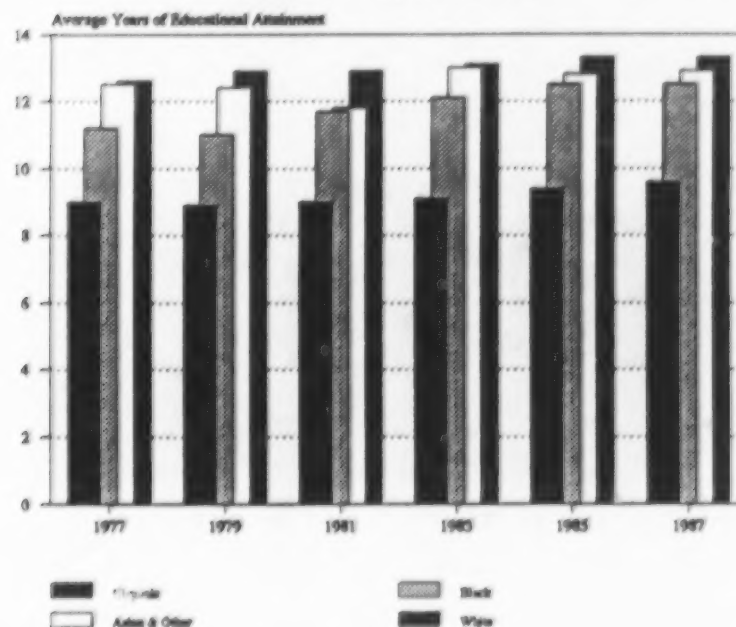


Source: Breakdown of March Supplement data from Current Population Survey respondents within California. Data provided courtesy of the Population Research Unit, Department of Finance, Sacramento, November 1988.

However, educational attainment has not been equal among California's population. Most notably, there are significant long-term differences among ethnic and racial groups. On average, Hispanics commonly fail to complete junior high

school while other ethnic-racial groups average more than a high school education. Whites, Asians and Blacks are roughly equal in school advancement, all of which average completion of between 12 and 13 years of school in recent years. Asians and Blacks have consistently been second and third among these three groups. Hispanics, on the other hand, have consistently lagged far beyond the other ethnic-racial groups. In contrast to other groups, Hispanics have consistently averaged between 9 and 9.6 years of school completion during the 1977-87 period. While the trend for Hispanics has been consistently upward, their educational achievement is far below the rest of the state (See Exhibit 19).

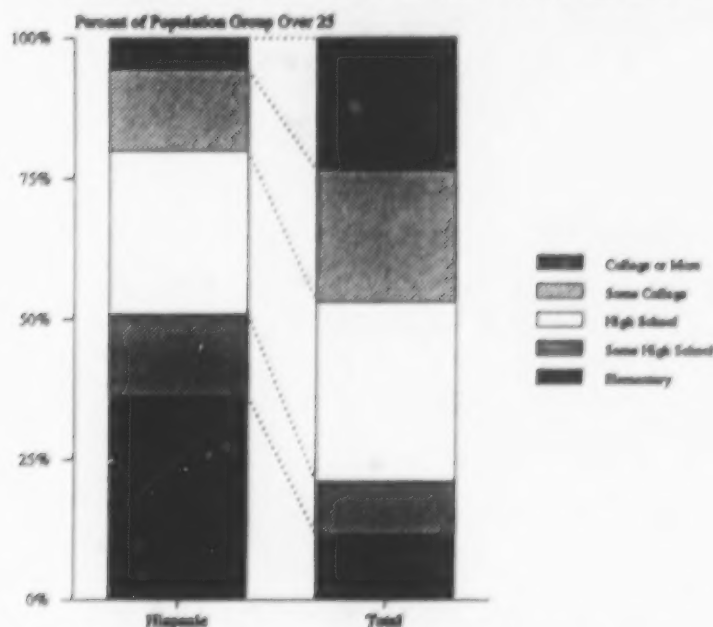
Exhibit 19
AVERAGE YEARS OF EDUCATION AMONG
CALIFORNIA ETHNIC-RACIAL GROUPS OVER 25
YEARS OF AGE, 1977 TO 1987



Source: Breakdown of March Supplement data from Current Population Survey respondents within California. Data provided courtesy of the Population Research Unit, Department of Finance, Sacramento, November 1988.

The educational gap between Hispanics and the rest of the state is dramatized by comparing benchmarks of achievement. Some 50.9 percent of Hispanics over age 25 have completed less than high school compared to 21.1 percent of the total adult California population. Almost half of the total population has completed at least some college compared to only 20.0 percent among Hispanics (See Exhibit 20).

Exhibit 20
COMPARISON OF LEVELS OF EDUCATIONAL
ATTAINMENT, HISPANIC AND TOTAL CALIFORNIA
POPULATION OVER 25 YEARS OF AGE, 1987



Source: Breakdown of March Supplement data from Current Population Survey respondents within California. Data provided courtesy of the Population Research Unit, Department of Finance, Sacramento, November 1988.

Years of completed educational "seat time" is not necessarily the "bottom line" on real educational achievement. However, the gap of school years completed between Hispanics and the total population suggests serious skill handicaps among this group.

BASIC EDUCATIONAL DEFICIENCIES

The above overview of educational attainment suggests the scope of basic educational deficiencies. In 1987, some 21.1 percent of the total state population over age 25 had not completed high school, and 11.9 percent had completed no more than an 8th grade education (See Exhibits 18 and 20). In absolute numbers, this translates to 3.5 million adults without a high school diploma and 2.0 million with no more than eight years of schooling.

Failure to complete high school is concentrated in the Hispanic community. Over half of California's 3.3 million Hispanics over age 25 had not completed high school in 1987 (See Exhibit 20).

As noted above, years of education does not necessarily equate to actual learning and skills. However, it is a reasonable indicator of educational achievement. Realistically, many who have left high school without a diploma have the skills and knowledge expected of a high school graduate.³¹ Conversely, many who receive high school diplomas do not have the skills for which they have been certified. In sum, it seems realistic to assume that the number of persons who have not completed 12 years of school roughly reflects the number of Californians who have some basic educational deficiencies, and the number with no more than eight years of schooling have serious basic educational deficiencies. Under these assumptions, about 21 percent or 3.5 million of California's adults are currently potential students for Adult Basic Education.

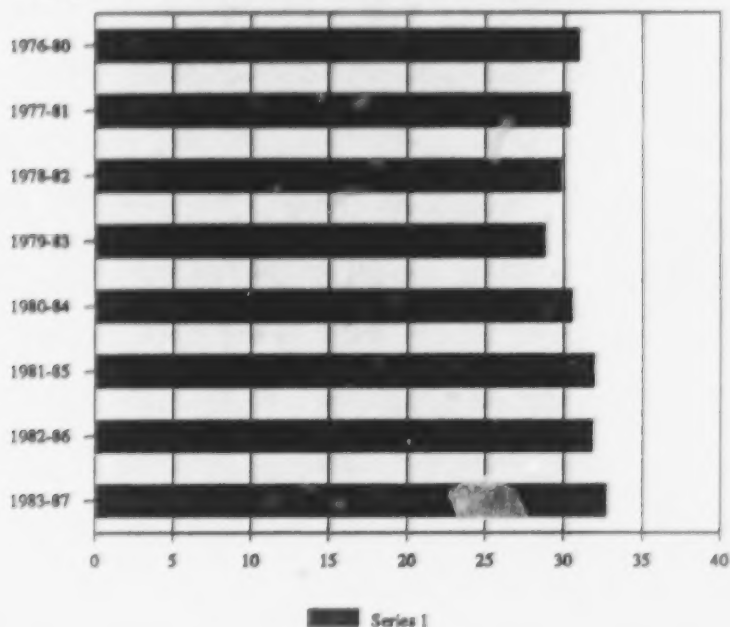
Will the proportion of adults with basic educational shortcomings increase or decrease? There are no definite answers to this question. However, it is possible to look at the source of adult basic educational deficiencies, and speculate about their prominence in the future.

In broad brush strokes, there are two major causes of basic educational deficiency. First, children and youth may, for a variety of reasons, drop-out of school or fail to learn while in school. Large portions of these "youth-at-risk" ultimately become "adults-at-risk" with basic educational deficiencies. Second, immigrant adults and their children frequently do not have formal educations from their native countries, and when they have, they may still have language handicaps resulting from problems with learning English. The scope of basic educational deficiencies stemming from difficulties with "English-as-a-Second Language" will be discussed in the next section.

Current trends indicate that unsuccessful completion of K-12 education is likely to continue as a cause of adult basic educational deficiencies. Statewide high school attendance rates indicate the extent of the drop-out problem. Between 1980 and 1987, the percent of students entering ninth grade that failed to complete twelfth grade fluctuated, but essentially inched up from 31.0 percent for the 1976-80 period to 32.7 percent for the 1983-87 period (See Exhibit 21).

³¹ David Stern, James Catterall, Charlotte Alhadeff, and Maureen Ash, "Reducing the High School Drop-Out Rate in California," California Policy Seminar, Institute of Government Studies, University of California, Berkeley, 1986, pages 26-27.

Exhibit 21
ATTRITION RATES IN CALIFORNIA PUBLIC
SECOND SCHOOLS, 1980 TO 1987
(Percent of Starting Ninth Graders Who Do Not Earn a Diploma)

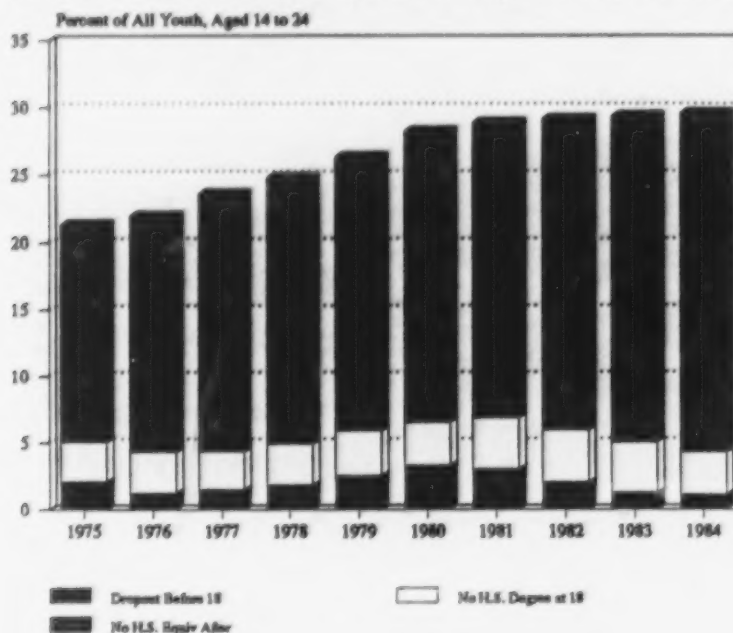


Source: California Basic Education Data System, California Department of Education, Sacramento, November 1988.

While some school age youth who leave school or fail to earn a high school diploma at age 18 return for a GED or other equivalency certification before age 24, most do not. State GED and other equivalency degree records indicate that over the six year period after high school graduation age, only a very small number of students obtain equivalency degrees (See Exhibit 22).

High school attrition rates indicate a persistence, if not growth, of K-12 drop out rates. Available data indicate that students who "drop-out" do not commonly complete their high school educations. Further, drop-out rates coupled with the general failure of drop-outs to complete diplomas has a cumulative impact on adult educational deficiencies. Year

Exhibit 22
CALIFORNIA YOUTH OUT OF SCHOOL AND
FAILING TO COMPLETE HIGH SCHOOL OR
EQUIVALENT DIPLOMA
 (Drop Outs and Non-Completers, Percent of Population Aged 14 to 24)



Source: *Tomorrow's Workers at Risk*, Youth Sub-Committee, California State Job Training Coordinating Council, Sacramento, 1986, page 12.

after year, the percent of post-high school age youth with less than high school educations continues to mount (See Exhibit 22). Unless a significant turn-around is achieved concerning attrition from high school, the proportion of adults over 25 years of age with some measure of basic educational deficiencies is likely to remain constant or grow.

THE SCOPE OF ILLITERACY

Illiteracy, which can result from educational failures at the K-12 level or the problems of shifting to "English-as-a-Second Language", is a significant problem for California.

A study conducted by SRA Associates estimated that 15 percent or 3.1 million of California's 20 million population over age 14 had "significant literacy performance deficiencies

during the year 1987.³² Not surprisingly, these estimates, which were based in a previous literacy assessment survey, indicate significant variations of illiteracy on the basis of ethnic and racial classification. Specifically, some 23.9 percent or 890,121 of the 3,724,355 California Hispanics over age 14 were estimated to have literacy deficiencies. Some 26.5 percent of Blacks and 28.3 percent of Asians were also estimated to have a similar level of deficiency. While only 9.8 percent of Whites had literacy deficiencies, they constituted the largest absolute numbers of illiterate persons (See Exhibit 23).

Exhibit 23
CALIFORNIA POPULATIONS OVER AGE 14 WITH
SIGNIFICANT LITERACY DEFICITS BY ETHNIC-
RACIAL CATEGORY, ESTIMATES FOR 1987

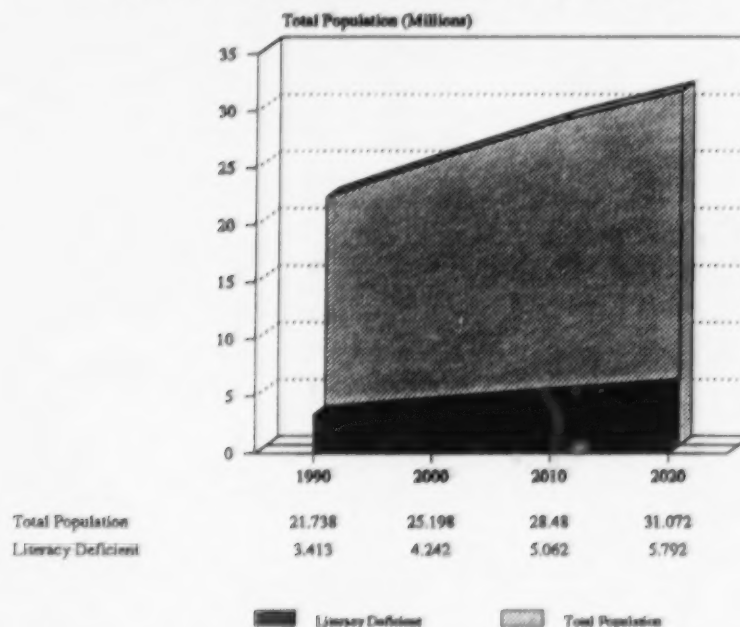
Ethnic-Racial Group:	Total Population Over 14:	Number with Literacy Deficit:	Percent with Literacy Deficit:
White	13,545,153	1,327,425	9.8%
Hispanic	3,724,355	890,121	23.9%
Asian and Other	1,646,628	464,349	28.2%
Black	1,484,592	393,413	26.5%
Total State:	20,400,728	3,075,308	15.1%

Source: Donald Dixon, Merrill Vargo and Davis Campbell, *Illiteracy in California: Needs Services and Prospects*, SRA Associates, 1987.

Using this study as a base assumption of the proportion of ethnic-racial groups that are likely to have literacy problems, it is possible to make rough projections of the future size of California's illiterate population on the basis of expected ethnic-racial proportions of future populations. These speculative calculations show that projected shifts in the distribution of ethnic-racial groups could cause the proportion of the California population over age 14 that have literacy deficiencies to increase from an estimated 15.1 percent in 1987 to 18.6 percent in 2020. In absolute terms, this would mean that some 4.2 million persons would have literacy deficiencies in the year 2000, and that this group could increase to 5.8 million by 2020 (See Exhibit 24).

³² Donald Dixon, Merrill Vargo and Davis Campbell, *Illiteracy in California: Needs, Services and Prospects*, Paper prepared for the State Department of Education, SRA Associates, July 1987, pages 23-33.

Exhibit 24
ESTIMATED NUMBER OF PERSONS OVER AGE 14
WITH LITERACY DEFICIENCIES COMPARED TO
TOTAL CALIFORNIA POPULATION, 1990-2020



Source: Projections calculated with census data using estimates of literacy deficiencies provided in Donald Dixon, Merrill Vargo, and Davis Campbell, *Illiteracy in California: Needs, Services and Prospects*, SRA Associates, 1987.

While these projections are not methodologically sophisticated, they are based upon sound, and for the most part, conservative assumptions. Unless immigration into the state drops off dramatically in coming years, illiteracy in California may well approach 20 percent as we move through the early decades of the 21st century.

IMPLICATIONS FOR ADULT EDUCATION

Trends concerning educational attainment and skill deficiencies among the state population have very important implications for Adult Education.

First and foremost, a significant portion of California's adult population is ill prepared for citizenship or employment. This population will be highly dependent upon Adult Education programs if they wish to improve their skills.

Second, overcoming illiteracy and the need to learn "English-as-a-Second-Language", is a critical need for hundreds of thousands of California residents. Whether study of Adult Basic Education or English is voluntary or required by statute, there can be little doubt that the demand for such instruction will be the critical issue for Adult Educators for years to come.

Third, the K-12 drop-out rate problem will have serious impacts upon the future of the state. Effective coordination between the K-12 and adult system will likely be necessary to facilitate continued education to both prevent and retrieve youthful drop-outs.

The level of literacy deficiencies ensures that the immediate impact of IRCA will significantly effect the Adult Education system. The long-run implications and opportunities of this program will be discussed shortly.

Finally, the lack of adequate skills, whether they be basic or job specific, among significant parts of our population is a serious threat to our economy. New approaches must be developed to work with employers to remove skill deficits.

New Public Policy Initiatives

Two recent public policy initiatives are likely to turn latent need for Adult Basic Education and English-as-a-Second Language on actual demand for services. The federal *Immigration Reform and Control Act (IRCA)* and state *Greater Avenues for Independence (GAIN)* welfare reform program are likely to galvanize increased participation in Adult Education programs among Californians with educational deficiencies.

GAIN WELFARE REFORM PROGRAM

The GAIN program requires all recipients of Aid to Families with Dependent Children (AFDC) with children over six to undertake active job search or training that will ultimately make them employable.

The GAIN program has gotten off to a slow start. However, future expansion of the program is likely to mandate the participation of many AFDC recipients in Adult Education programs. Upon entry into the program, GAIN participants are

given an appraisal to determine whether remedial education is needed. Analysis of appraisal scores shows that about 40 percent of early participants require some type of remedial study. For the 1987-88 program year, the Department of Social Services reports that 68,383 welfare recipients were appraised. Approximately 20,000 of these early participants were sent to Adult Basic Education Programs, one-fourth of which were assigned to ESL programs and the remainder to Adult Basic Education. The department also reports that about 6,000 voluntary GAIN participants took "upper-end" educational programs at state universities and community colleges.

How many GAIN participants will ultimately use Adult Education? About 600,000 California families draw benefits from the AFDC program. The California Department of Social Services reports that about 60 percent of those recipients are "GAIN eligible", and that federal welfare reform statutes may enlarge this number. However, given the complexities of implementing the program, the Department expects only 130,000 participants by the 1991-92 program year. If past appraisal and participation patterns hold true for the future, it seems reasonable to expect an influx of between 40,000 and 60,000 Adult Education participation as a result of GAIN.

IRCA IMMIGRATION AMNESTY PROGRAM

IRCA, the second public policy initiative of interest is likely to have far greater, but less lengthy, impact on Adult Education. IRCA provides a "window of opportunity" for illegal immigrants, most of which are from Mexico, to become U.S. Citizens. The naturalization process requires minimal adult instruction, primarily in "English-as-a-Second Language" and rudimentary citizenship orientation.

The demands to be placed on Adult Education by IRCA promise to be explosive. Conservative estimates of illegal immigration into California are in the neighborhood of 60,000 per year. Actual influx from this source is likely to be higher, and it has accumulated for many years.

Nationwide, 2,549,087 persons applied for residential amnesty before the IRCA imposed cut-off date in 1988. Some 1,762,134 applied under the provisions allowed for illegal aliens. The rest applied under provisions for agricultural workers. About 1.4 million of these applications were made in

³³ *GAIN Appraisal Program II: Second Report*, The CASAS System, San Diego, November 1987.

³⁴ *Statistical Abstracts of the United States, 1985*, Bureau of the Census, Washington, D.C., 1988, Table 640, page 380; *California Statistical Abstracts, 1987*, Department of Finance, Sacramento, 1988, Table E-15, page 79.

California, half of which were located in metropolitan Los Angeles. Seventy percent of these applicants have little or no English ability, and an estimated one fifth have little or no literacy in their own native language.³⁵

The Department of Education estimates that Adult Education enrollment resulting directly from IRCA will be 780,000 in 1988, peak at 982,000 in 1989, then drift downward to somewhere between 240,000 and 480,000 after 1989. A large part of the post-1989 IRCA enrollment is expected to develop as immigrants learn about available educational services and voluntarily choose to pursue learning beyond the basic IRCA requirements.

IRCA is likely to have significant long-term impacts on California's Adult Education system, particularly as previously cautious and mistrustful immigrant families gain trust in the system and confidence in their own residential citizenship status. However, it is too early to predict the real scope or nature of these long-term impacts.

Special Groups and Trends

As a parting shot, it is important to mention two client groups that have been and are likely to be continuing users of Adult Education. These include the disabled adult population and the prison population.

HEALTH AND DISABLED ADULTS

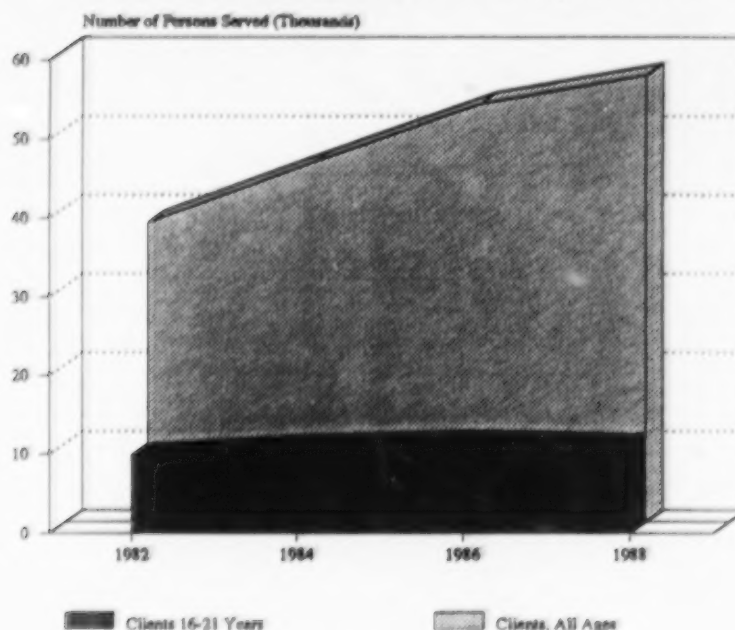
The Department of Developmental Services (DDS) reports the existence of 56,675 developmentally disabled clients, 45,520 of whom are over the age of 22. They claim that this number represents the large majority of developmentally disabled persons in the general population. These persons reside in state hospitals, community care centers or in private homes. Four out of five are considered "ambulatory" or able to partially care for themselves.

The number of developmentally disabled persons receiving services from DDS has increased a dramatic 49 percent since 1982, when the Department began keeping comparable statistics (See Exhibit 25). The likely explanation is that the

³⁵ Roger E. Olsen, "Immigration Reform and Control Act (IRCA) of 1986 and Implications for Adult Education", *OnLine*, American Association of Adult and Continuing Education, Washington, D.C., Volume 6, Number 4, pages 2 and 3.

developmentally disabled population is becoming more aware of the services available to them. Contributing to this is the increasing number of special education students who leave school and continue to receive services from DSS.

Exhibit 25
PERSONS SERVED BY CALIFORNIA DEPARTMENT
OF DEVELOPMENTAL SERVICES, 1982-88



Source: Department of Developmental Services, November 1988.

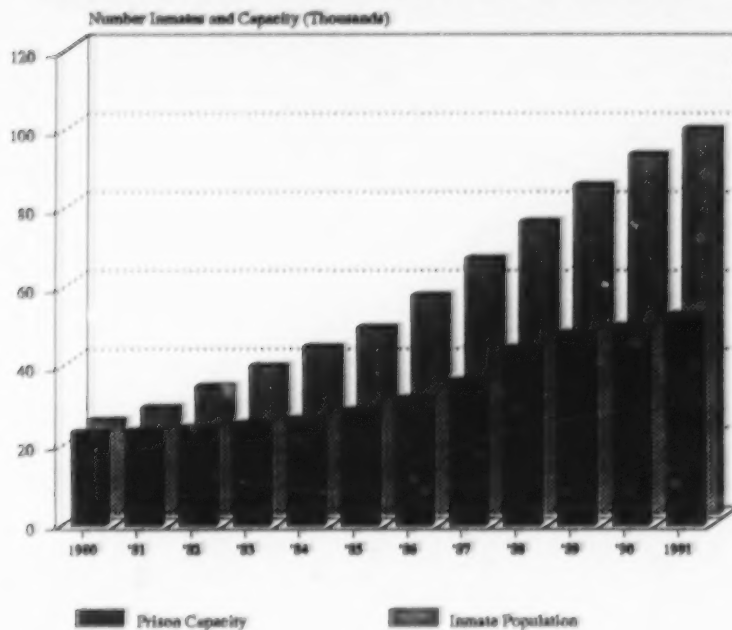
The decision by the State to move more of the developmentally disabled population from state hospitals to community care facilities will increase the demand for educational services for this group. In order to live and survive in these less structural community facilities, these individuals will need to learn more functional living and self-care skills.

General health issues may also require health and safety instruction within certain communities. The increasing costs of medical care and health insurance may foster a demand for classes dealing with preventive health care. Additionally, the continued growth of AIDS may require public instruction on this modern day plague.

PRISON POPULATIONS

The California prison population has grown much faster than the state population. The state prison system alone had 64,737 inmates in 1987 and is projected to have 97,710 by 1991. In contrast, prison capacity is scarcely over half the size of the inmate populations (See Exhibit 26).

Exhibit 26
SIZE OF STATE PRISON INMATE POPULATION AND PRISON CAPACITY, ACTUAL AND PROJECTED



Source: *Changes in Corrections: 1986-87, Annual Report*, California Department of Corrections, Sacramento, 1987, page 8.

Beyond incarcerated inmates, the Department of Corrections also has custodial responsibility for paroles, jurisdictional placements and other prisoner classifications amounting to an additional 63,261 in 1988.³⁶ Available information indicates that over half the inmate population did not graduate from high school, and thereby require remedial education if they are to have a chance at rehabilitation. Growth of state, county, and California Youth Authority prison populations suggests expanding demands upon adult education from this group.

³⁶ Education and Inmates Programs, Briefing, California Department of Corrections, Sacramento, October 1988.

IMPLICATIONS FOR ADULT EDUCATION

Powerful economic, social and demographic forces will push California's Adult Education system to find new and more effective ways of balancing mounting demands for English and basic skills with demands for programs that meet adult interests beyond basic skills.

Demographic, social and economic forces are shaping the future environment and clientele of California's Adult Education system. Eight key forces have been reviewed in this paper:

- Ethnic and Racial Plurality
- Aging Population
- Changing Family Life and Parenthood
- Work and the Labor Force
- Education and Skills
- New Public Policies
- Special Groups

These forces will determine the size and categories of persons to be served. They will also affect the types of instruction to be provided and the ways in which services are delivered. The implications of these forces for Adult Education are summarized below.

Implications of Population Growth

The population of California will continue to grow, in some counties at remarkable rates. The implications for Adult Education are as follows:

- **Serve Larger Populations.** California's growing population clearly means that Adult Education will have to serve larger populations. This will require more teachers, facilities and other resources.

- **Responding to Rapid and Uneven Growth.** In the case of small but rapidly growing counties, high growth rates may pressure Adult Schools to expand and adjust their programs to meet the demands of changing and larger populations.

California's population is changing in composition as well as size. These changing population characteristics have far greater implications for Adult Education than size.

Implications of Ethnic and Racial Pluralism

California's ethnic-racial profile is changing rapidly. In the future, no ethnic-racial group will be a majority. There are to direct implications for adult education:

- **More Flexible Delivery Systems That Accommodate Cultural Diversity.** The growing diversity in the racial-ethnic composition of the population will place new demands for effective and flexible methods for delivering adult education services. Bi-Lingual teaching is likely to be in increasing demand and teachers and programs must be more sensitive to cultural differences.
- **A Second Language for English Speaking Persons.** California's growing cultural plurality may cause many native English speaking persons to study a second language.

Large differences in basic educational achievement among the various ethnic-racial groups and high rates of deficiency in English among Asian and Hispanic groups will also impact adult education. These impacts will be discussed in a later section dealing with skills and English proficiency. Another impact will stem from the massive effort to provide legal status to specified immigrant groups under the *Immigration Regulation and Control Act* (IRCA). This will also be discussed later.

Implications of an Aging Population

California's population is getting older. This will impact the types of instruction that will be in demand and the general environment surrounding Adult Education.

- **Conflict Over Resources.** The costs of public and private pensions coupled with the mounting costs of health care, are likely to foster competition among different generations for resources. Education, including Adult Education, may be progressively challenged for resources.
- **Need for Economic Productivity and a Skilled Work Force.** Age distribution in the future will cause the proportion of working age adults to decline relative to dependent children and retired persons. If living standards are to be maintained and the California economy kept strong, the working adult population must have full access to the education and training necessary to develop and update competitive skills.
- **Classes for the Older Populations.** Changing age profiles will increase the demand for educational services for an aging and older persons. Health, exercise and preventive medical care courses are likely to be in greater demand.
- **Instructional Methods and Delivery.** Older students, particularly the very old, may require special systems of educational delivery such as transport services and mobile classrooms.
- **Career Counseling and Vocational Training for Older Adults.** Increasing longevity and health, coupled with financial needs, may cause many pre-retirement aged persons to undertake new careers rather than retire. This may intensify the need for courses that provide career-change guidance and vocational retraining.
- **Shortage of Adult Education Teachers.** Many of today's teachers are approaching retirement age. When attrition due to retirement is combined with the reluctance of today's younger generation to enter teaching, Adult Schools may find it

increasingly difficult to recruit and retain qualified teachers.

The "greying" of the national and California population is one of the major transformations of our time. Year by year, it will gradually shift the priorities of Adult Education.

Implications of Family Life and Parenthood

The rise of working and single parents has important implications for adult education:

- **Accessibility of Adult Education.** The temporal and logistical constraints that confront single and working parents make it necessary to develop delivery systems that cater to adults who have limited flexibility for choosing the time and location of their studies. Child care, alternative scheduling, multiple training sites, decentralized educational technologies, and other delivery innovations will be particularly important.
- **Classes on Parenting and Domestic Skills.** The changing face of California's families also has implications for the content of adult education. Teenage parents who have left school and assumed adult responsibilities before they have adult skills will require intensive educational support for both basic skills and coping with their particular problems. Courses on child care and domestic skills such as cooking and home maintenance are also likely to be in demand among parents from all walks of life.

No matter what the course of study, delivery will be an important issue for today's parents. Even the finest adult courses will be useless to a parent who must choose between attending classes or neglecting their child or job.

Implications of Work and the Labor Force

Changes in the labor market and the world of work will also impact the future of adult education:

- **Need to Increase the Skills of Adult Workers.** The skills required for most jobs of the future will be higher than those required today. If tomorrow's adult population does not have adequate skills, adult education systems will be one of the primary vehicles for upgrading the workforce to meet economic needs.
- **Need for Recurrent Job Training.** A shifting occupational and industrial structure coupled with significant skill requirement changes within established occupations indicates that adults will have to continually update their skills.
- **Resources to Assist Workers Cope with Career Change and Job Displacement.** Voluntary career changes and involuntary job displacement will foster the need for retraining among many workers. For some, this may require major educational efforts. In other cases, it will require educational services such as career education, job search methods, and targeted job training based on individual assessment.

The costs of capitalizing for state-of-the-art vocational training facilities may or may not be feasible or desirable. However, adult schools are likely to play a major role in the areas of assessment and career planning.

Implications of Educational Success and Failure

Trends concerning educational attainment and skill deficiencies point to serious problems and important roles for adult education:

- **Need to Combat Illiteracy.** Hundreds of thousands of Californians need to learn how to read, write, and speak English. There can be little doubt that the demand for such instruction will be the critical requirement for Adult Educators for years to come.
- **Basic Education for Adults Who Dropped-Out.** The K-12 drop-out problem will have a serious impact on California's future. Effective coordination between the K-12 and adult system will likely be necessary to both prevent and retrieve

youthful drop-outs. Current trends also indicate that adult education will be called upon to provide basic education and educational certification to adults who dropped out in earlier years.

- **Need to Upgrade Skills of Adult Labor Force.** A significant portion of California's adult population does not have the basic skills for productive employment. Others lack adequate job specific skills. The careers of these persons and the economy of the state will be highly dependent upon Adult Education programs.

Waves of immigrants with limited English-speaking skills and a backlog of adults without basic educational skills will place demands to provide hundreds of thousands of adults with a critical foundation of education.

Implications of New Public Policies

Two recent public policy initiatives will interact with other social and economic forces to increase the demands placed on Adult Education:

- **Literacy and Basic Education for the GAIN Program.** Current trends indicate that only a small portion of eligible AFDC recipients will participate in the basic educational components of the GAIN welfare reform program. Nonetheless, Adult Education must be prepared for added students from this source and program compliance requirements.
- **Short-Term Mobilization.** Short-term literacy and basic education must be provided for a one-time "balloon" group of approximately 900,000 persons during 1989-90. This will require public staff recruitment organization, and curriculum development.
- **Monitoring and Planning Post-IRCA Adjustments.** The long-term impacts of IRCA on Adult Education are unclear. Enrollment may return to levels similar to those of the pre-IRCA years, or IRCA students could continue to enrollment in order to improve their skills beyond the minimum IRCA requirements. Trends and prospects should be monitored carefully.

Implications of Special Groups

Two special groups beyond those identified in the above discussion are likely to place increasing demands upon Adult Education:

- **Prison Inmates and Parolees.** California's prison population is growing much faster than the general population. Since so many parolees have basic skill deficiencies, any hope of finding legitimate employment and cutting back recidivism depends heavily on providing them with a basic education. Hence, demand for such educational services from this group is growing rapidly.
- **Disabled Adults.** The number of developmentally disabled citizens receiving State services has increased 49 percent between 1982 and 1988. If these trends persist, this group will place an increasing demand for adult education services.

Providing services to special groups will always require the development of instructional methods and delivery techniques that effectively encourage and maintain participation. The growing size and diversity of services to be provided will therefore require particular attention to delivery issues.

• • • • •

The above eight sources of change indicate that California's Adult Education system must focus upon two key missions. First and foremost, it must make literacy and basic education accessible to a larger and increasingly diverse population of adults. Second, it must provide a variety of special courses to meet the needs and interests of adults in areas beyond basic education and literacy. The key challenge will be to balance these two important missions.

The need to negotiate a balance between basic and other types of education is not new. However, the task of monitoring this balance will be particularly difficult as adult education is called upon to correct the mounting lack of basic skills in a workforce that must re-establish the international competitiveness of our economy.